

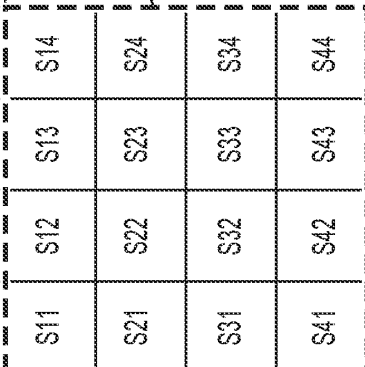
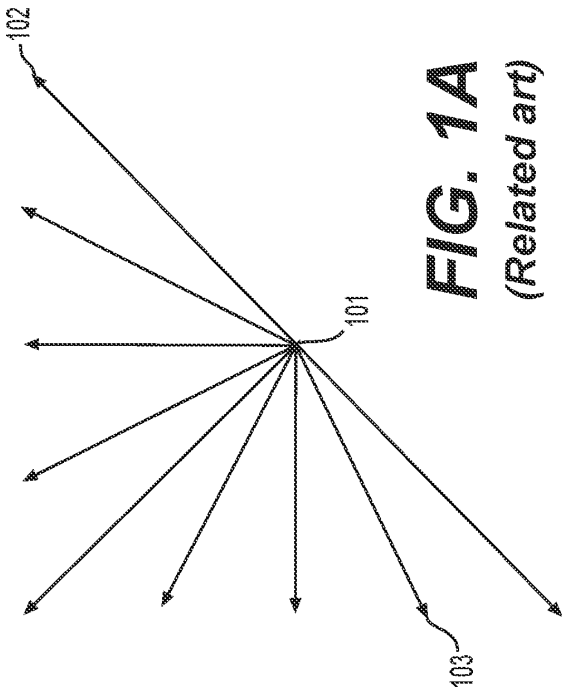
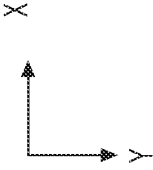
	R01	R02	R03	R04	R05	R06	R07	R08	R09
R10	S11	S12	S13	S14					
R20	S21	S22	S23	S24					
R30	S31	S32	S33	S34					
R40	S41	S42	S43	S44					
R50									
R60									
R70									

FIG. 1A
(Related art)



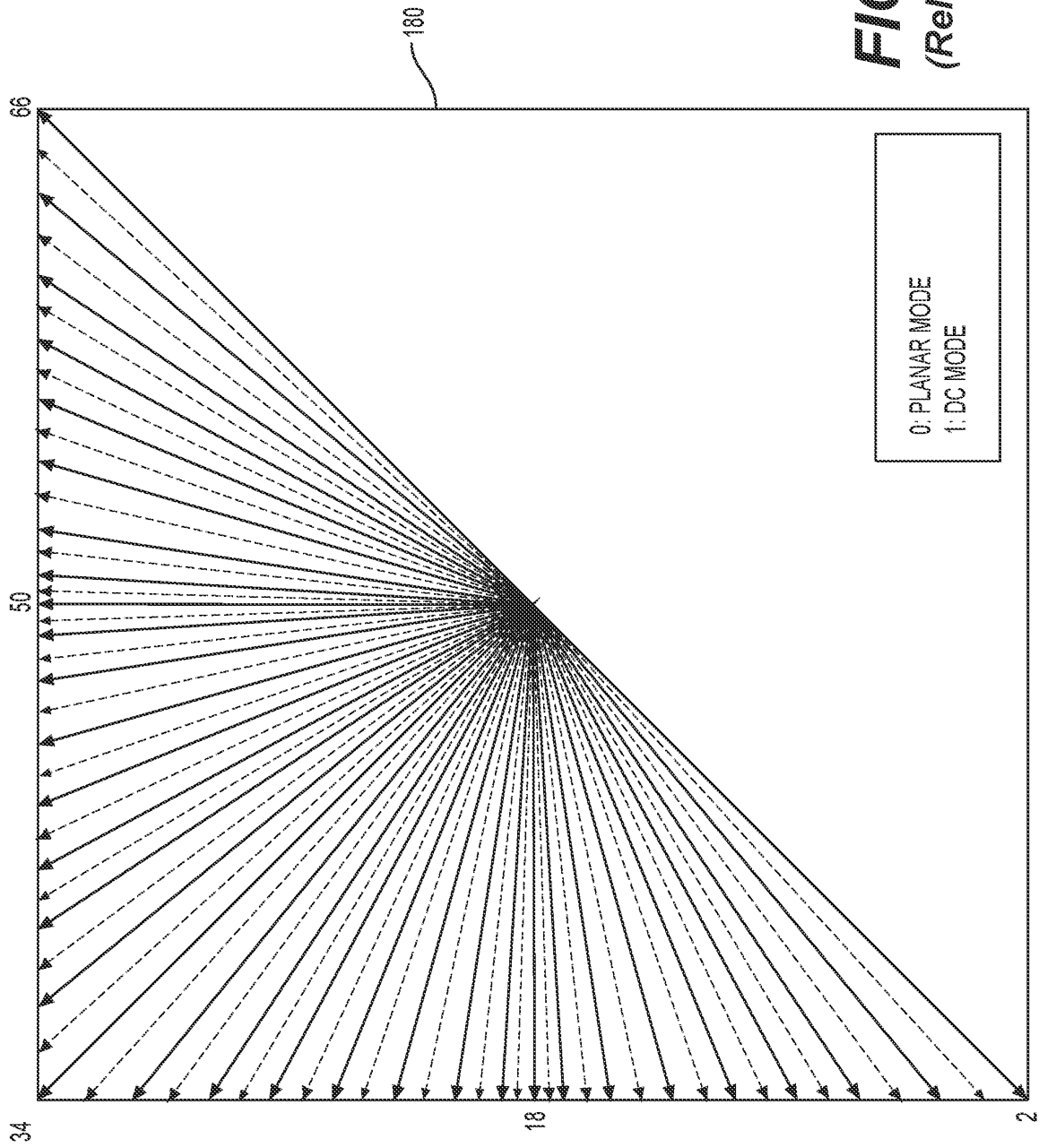


FIG. 1B
(Related art)

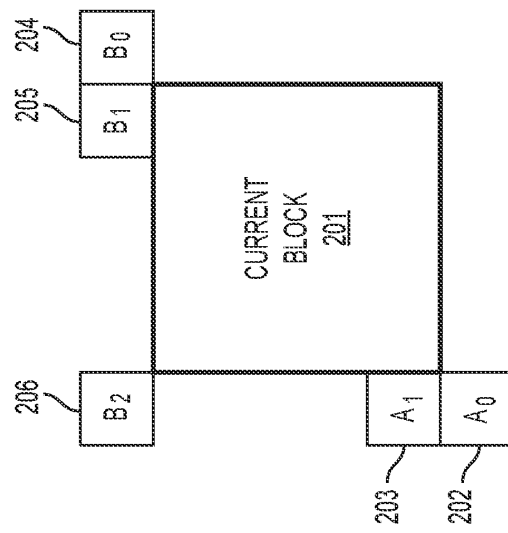
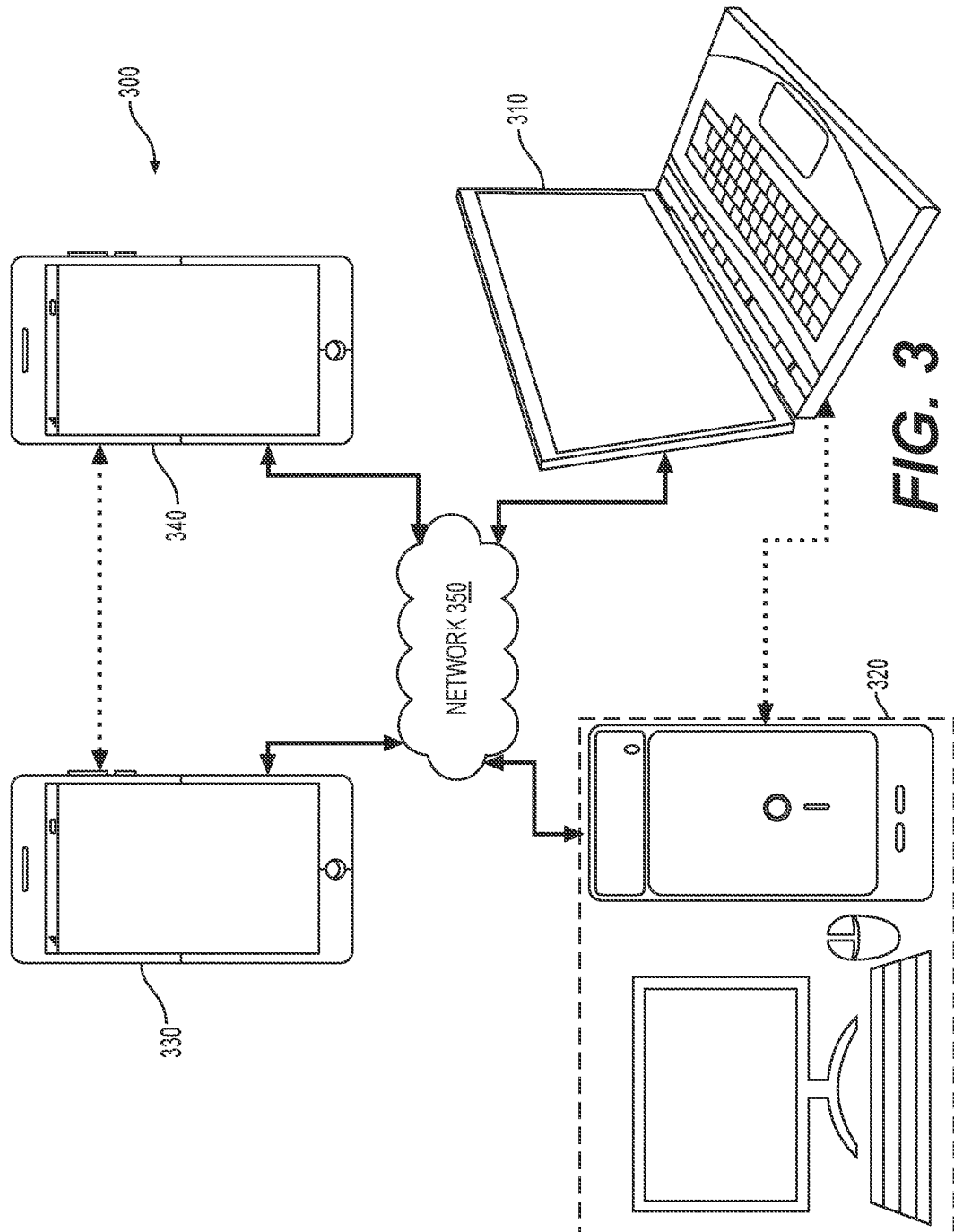
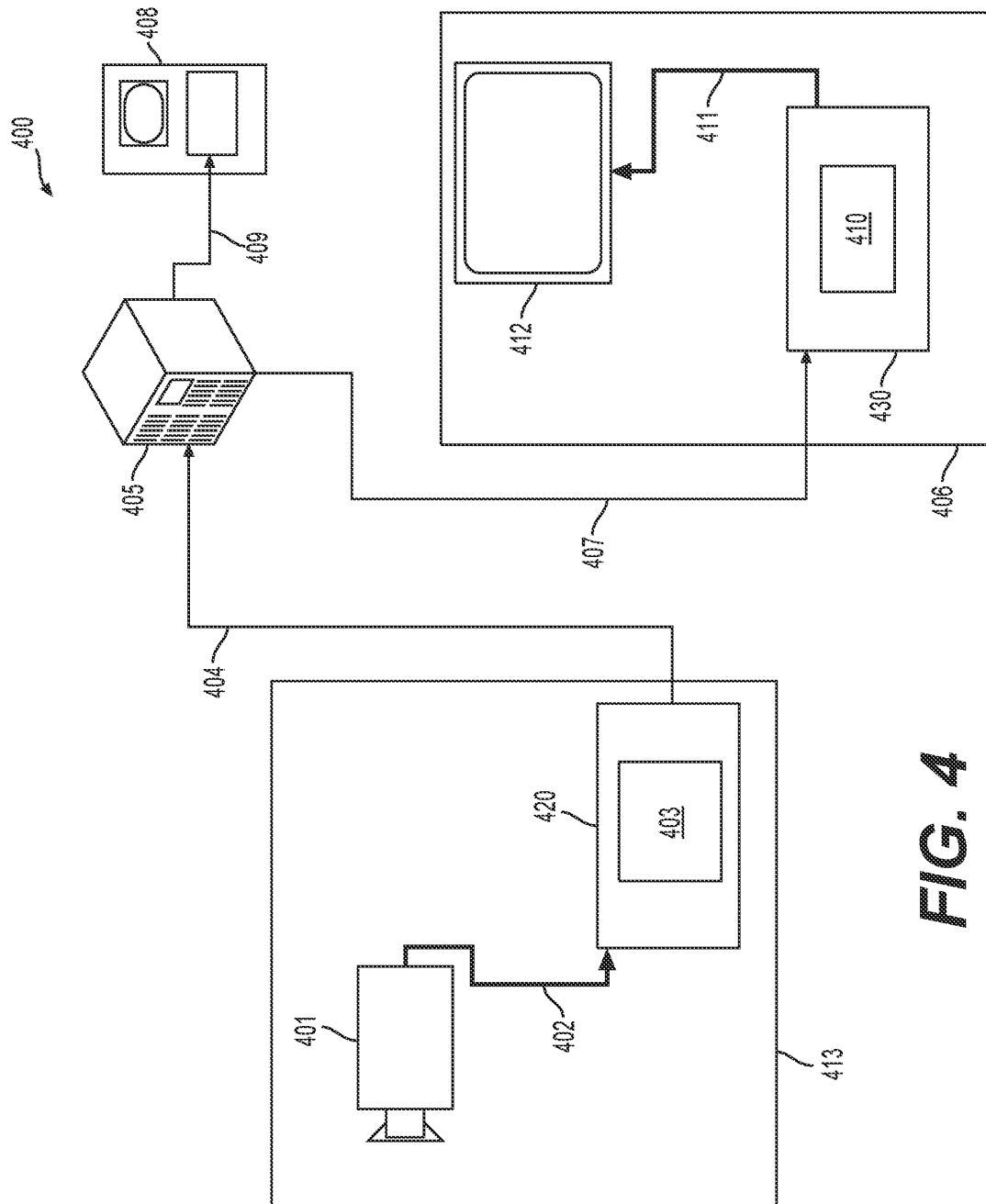
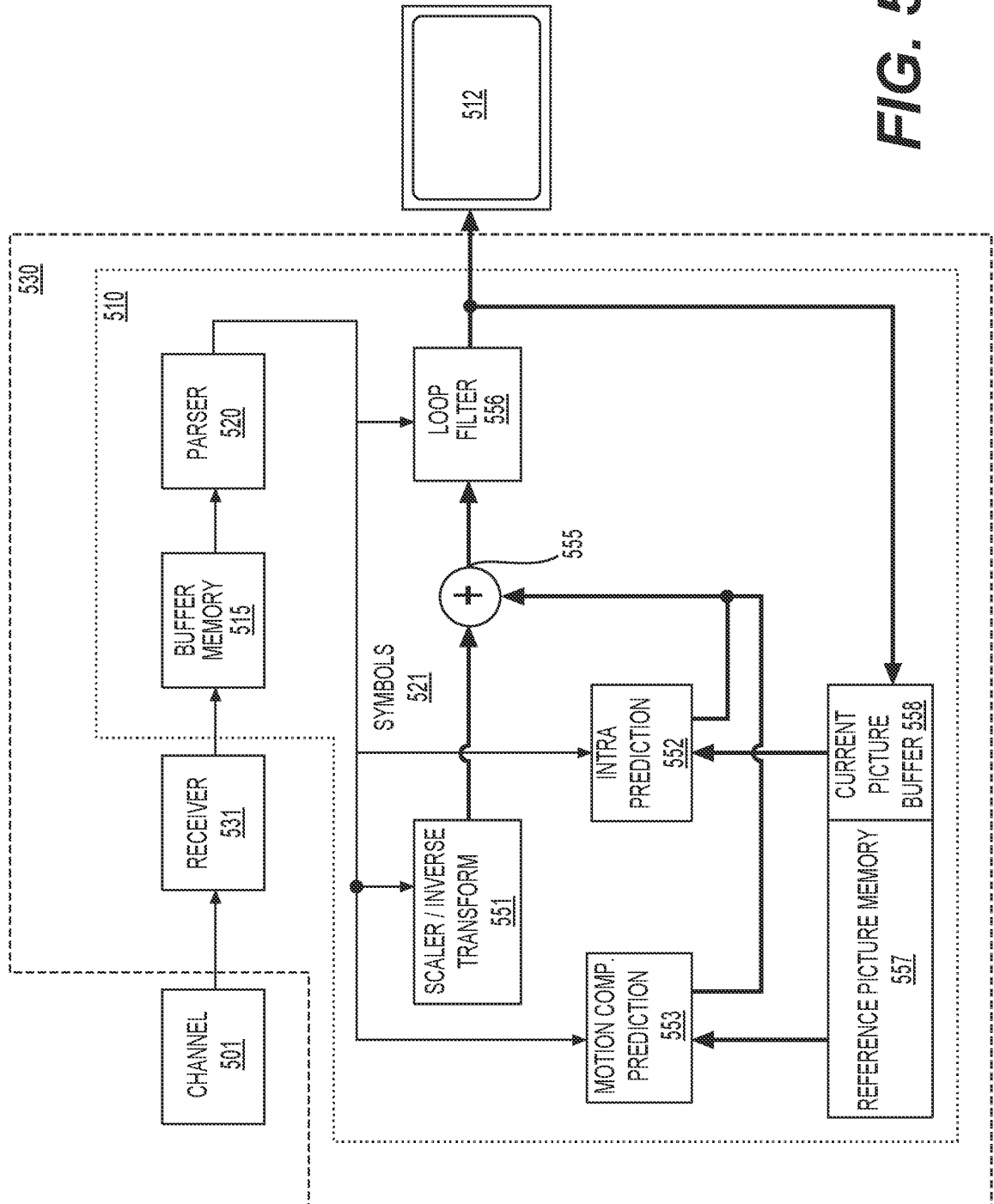


FIG. 2
(Related Art)



**FIG. 4**

**FIG. 5**

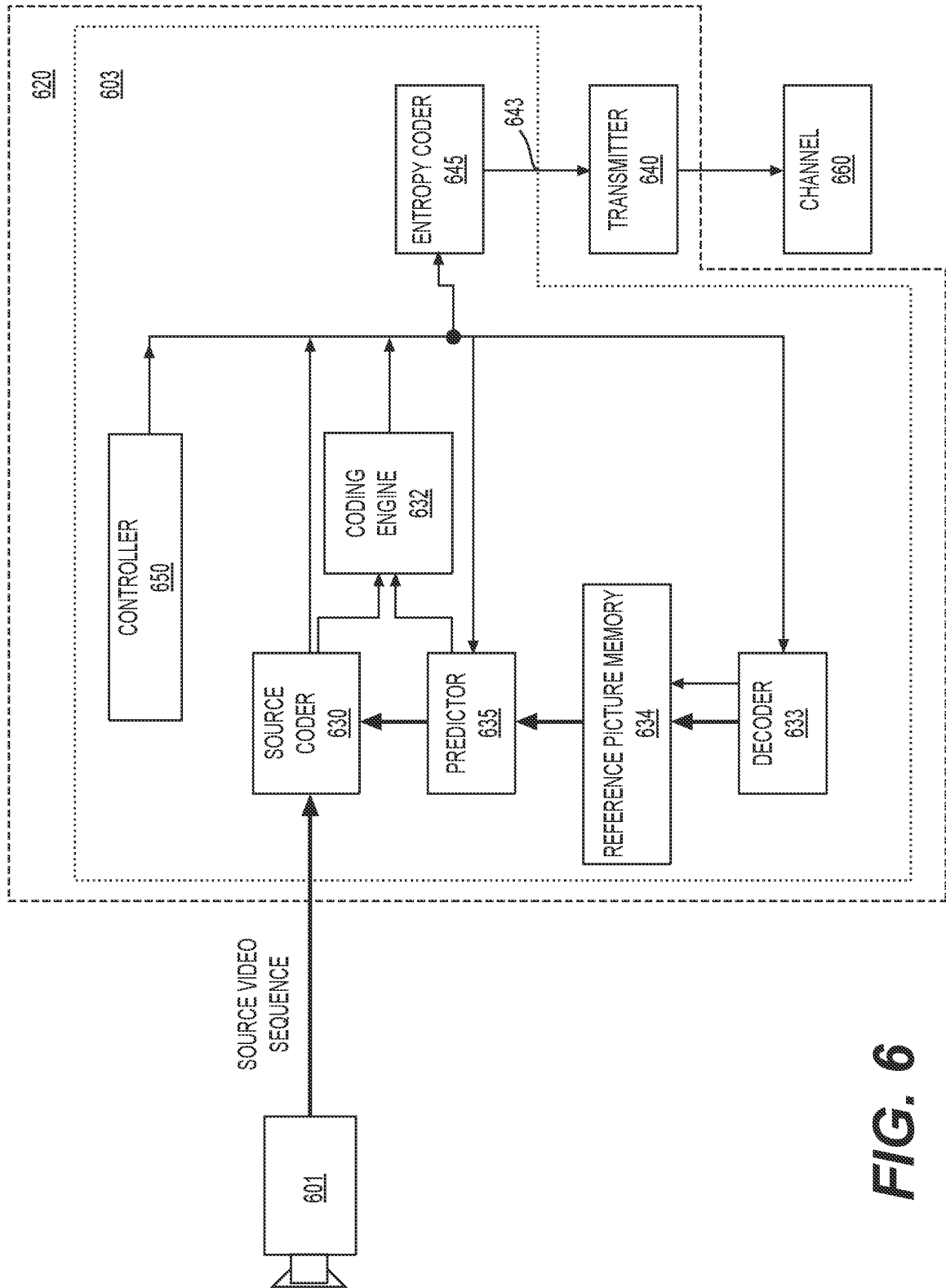
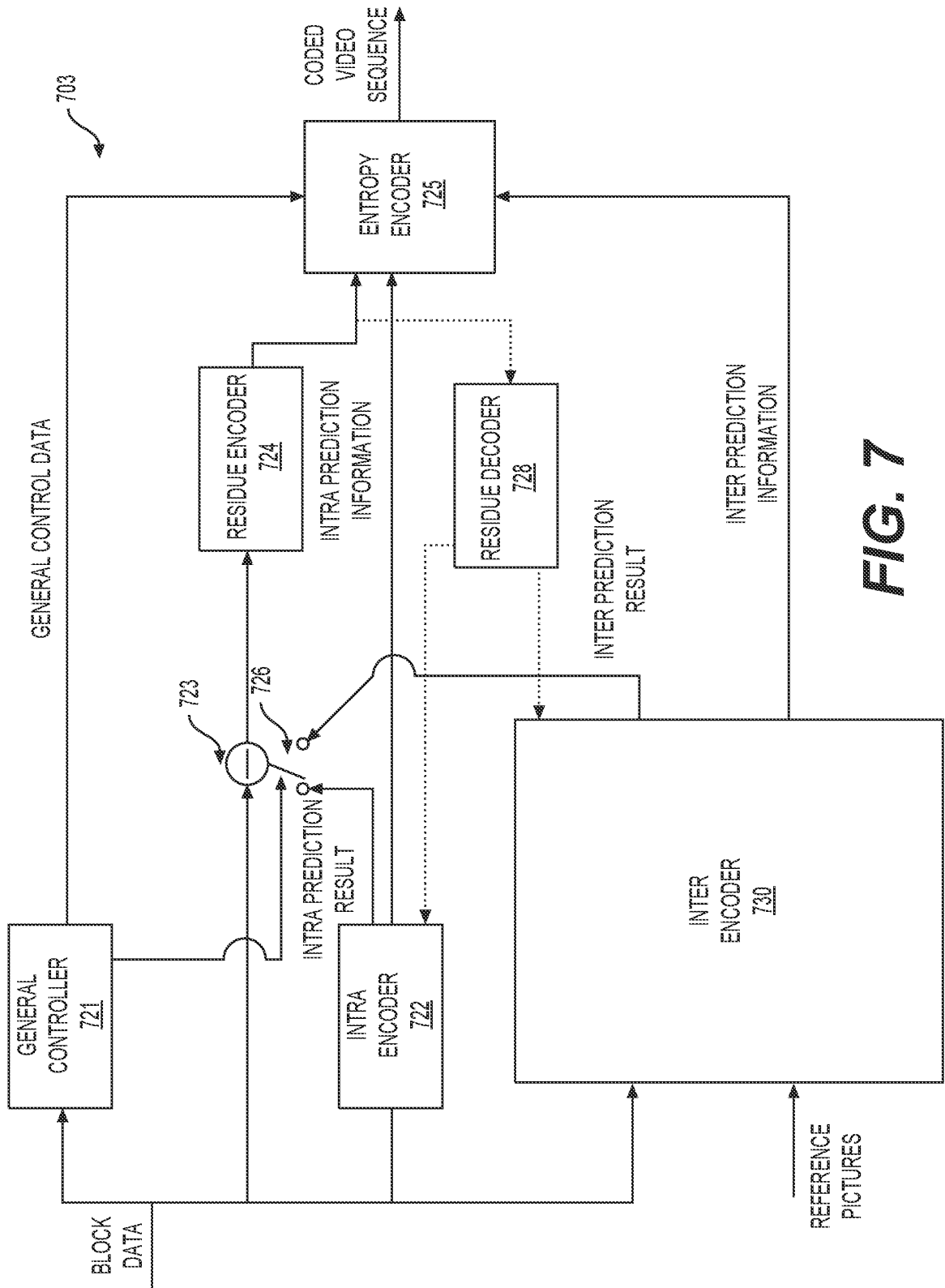
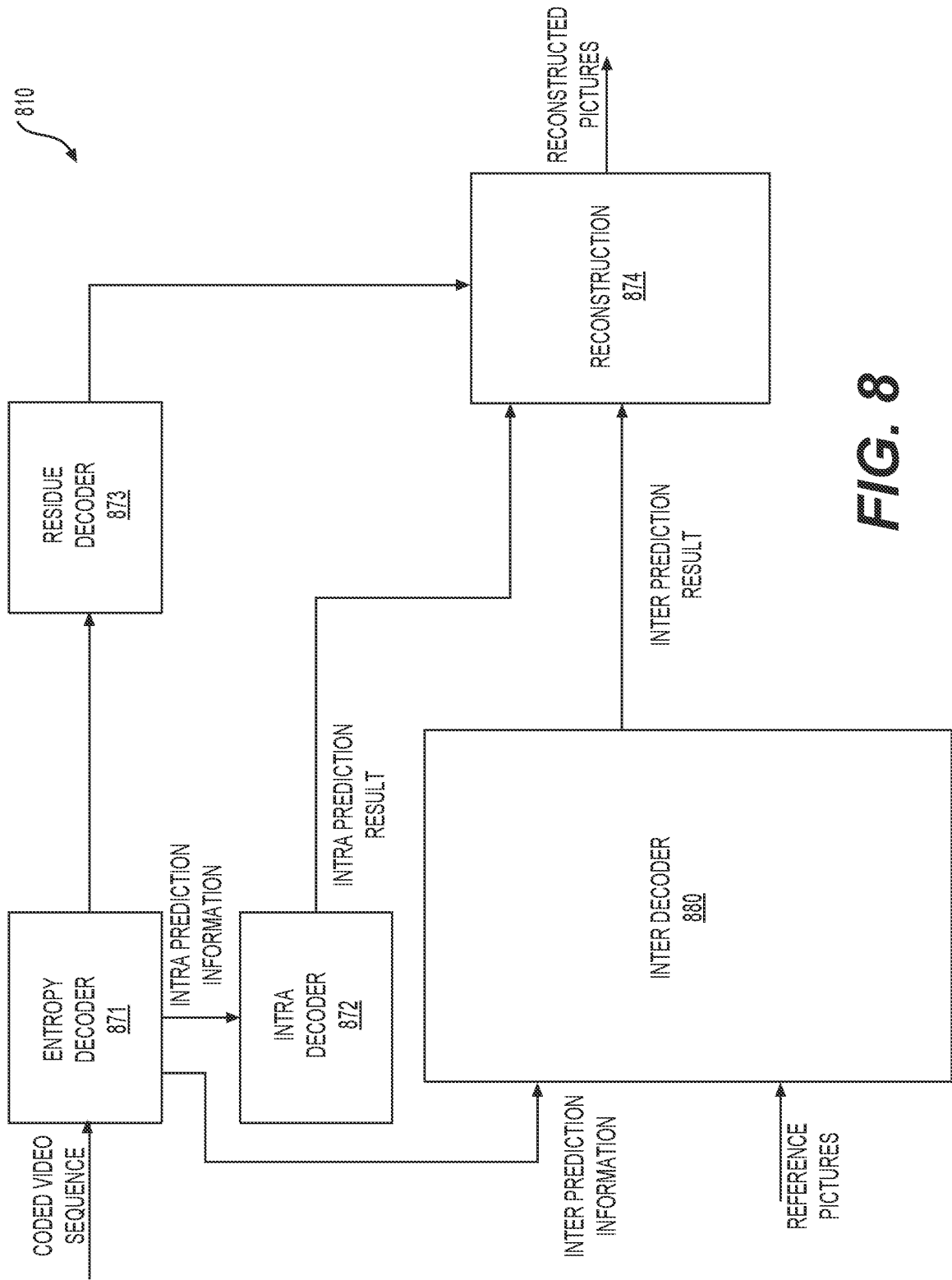
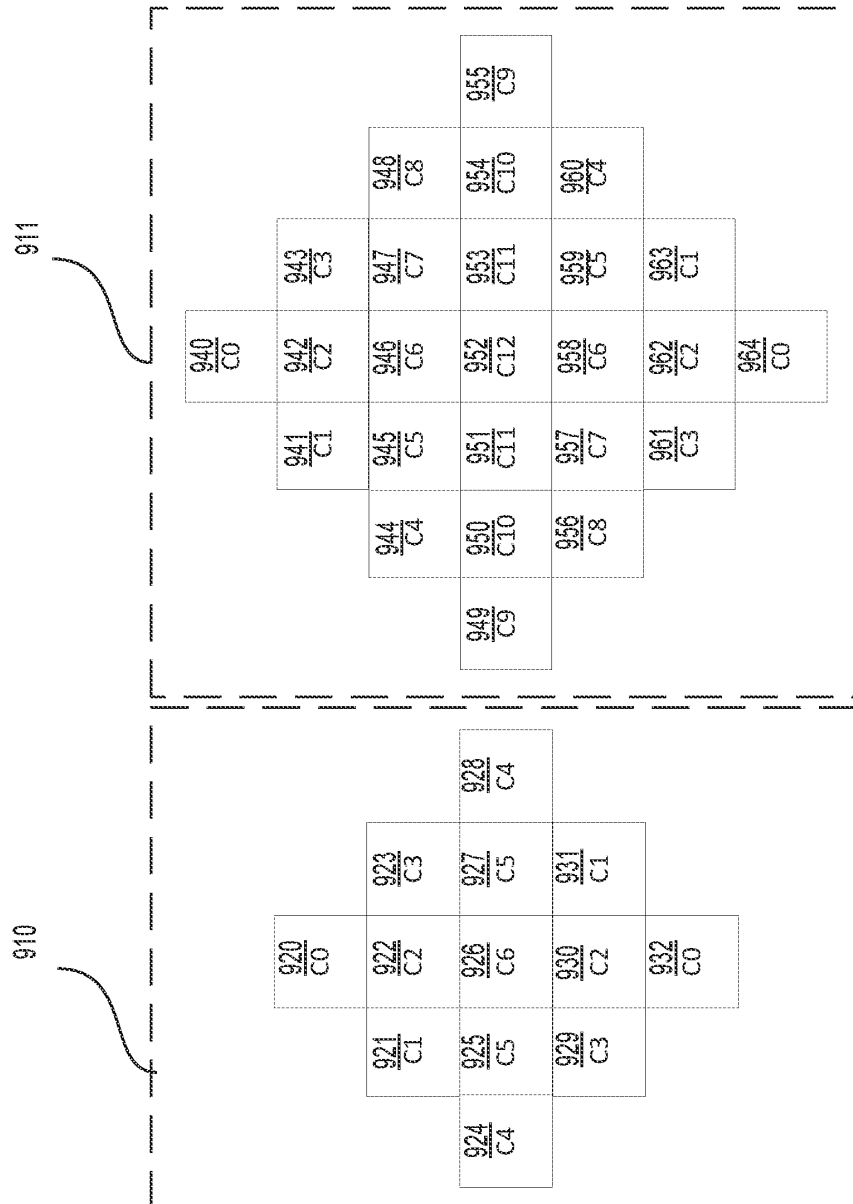


FIG. 6

**FIG. 7**

**FIG. 8**

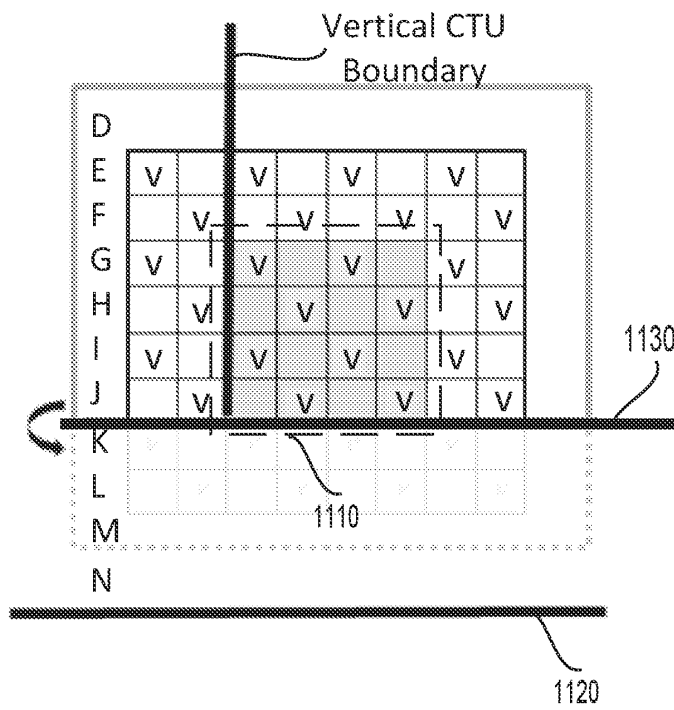
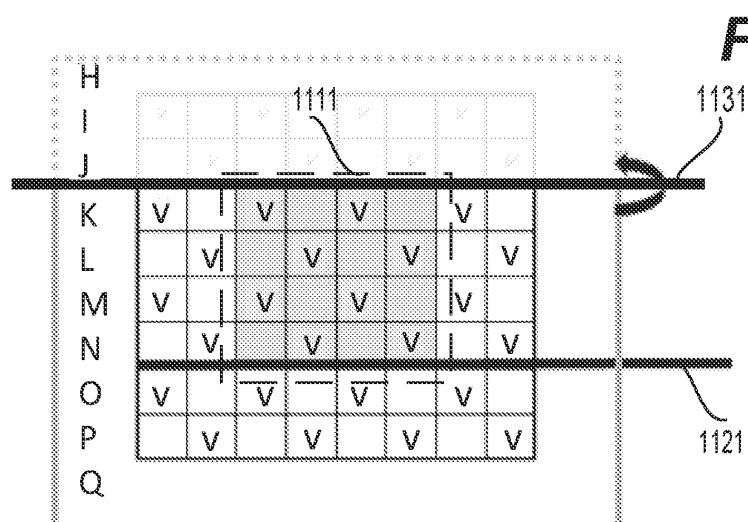
**FIG. 9**

	H		H		H		H
H		H		H		H	
	H		H		H		H
H		H		H		H	
	H		H		H		H
H		H		H		H	
	H		H		H		H
H		H		H		H	

FIG. 10B

	✓		✓		✓		✓
✓		✓		✓		✓	
	✓		✓		✓		✓
✓		✓		✓		✓	
	✓		✓		✓		✓
✓		✓		✓		✓	
	✓		✓		✓		✓
✓		✓		✓		✓	

FIG. 10A

**FIG. 11A****FIG. 11B**

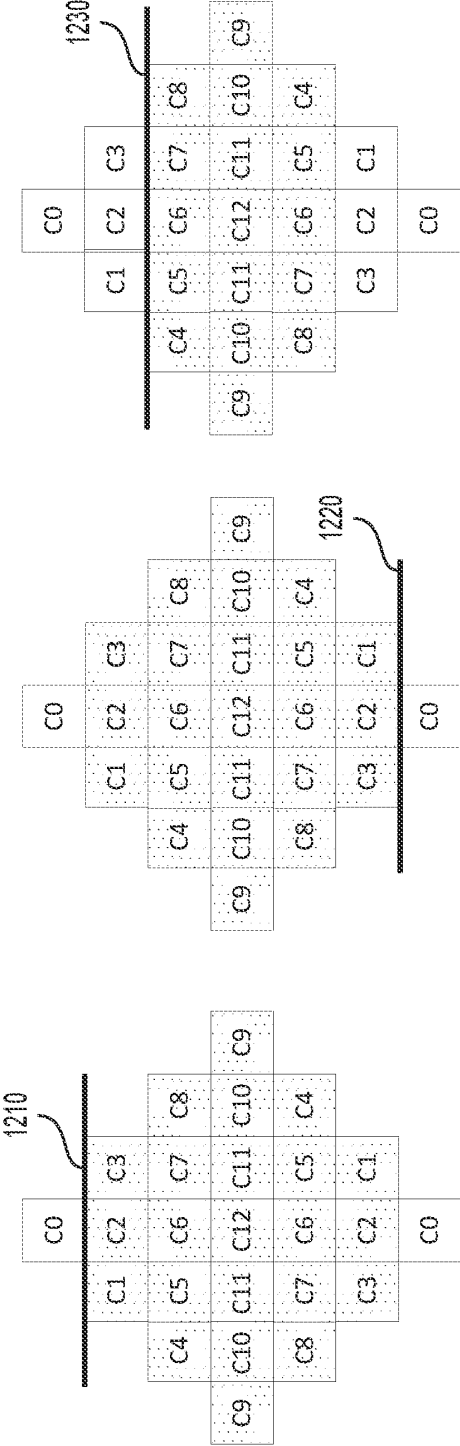


FIG. 12A

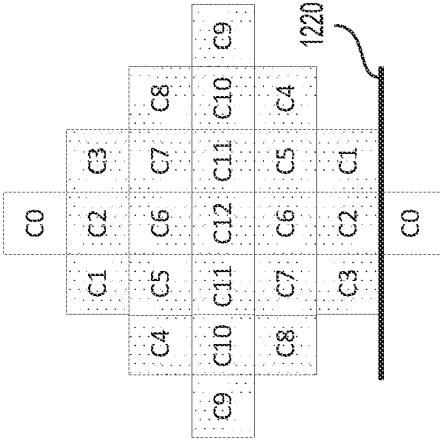


FIG. 12B

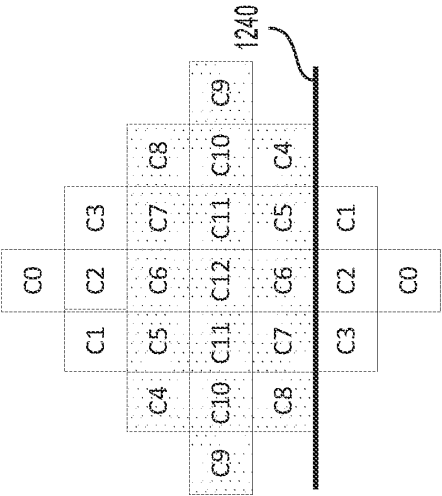


FIG. 12D

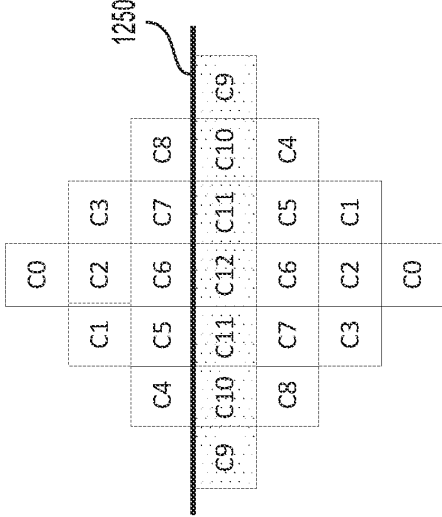


FIG. 12E

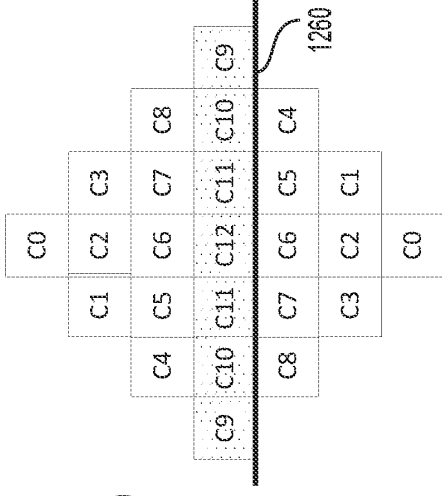
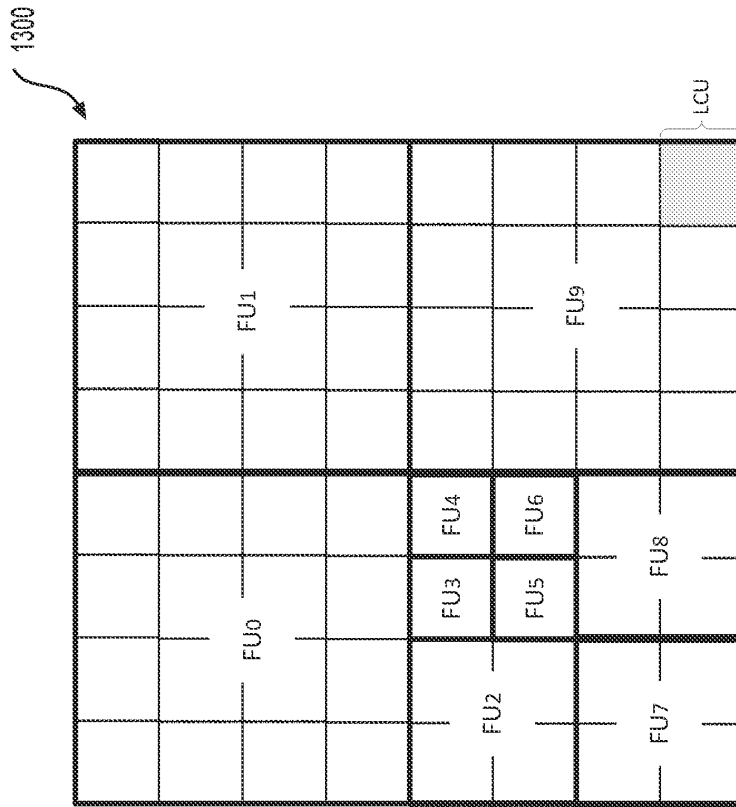


FIG. 12F

FIG. 12C

**FIG. 13**

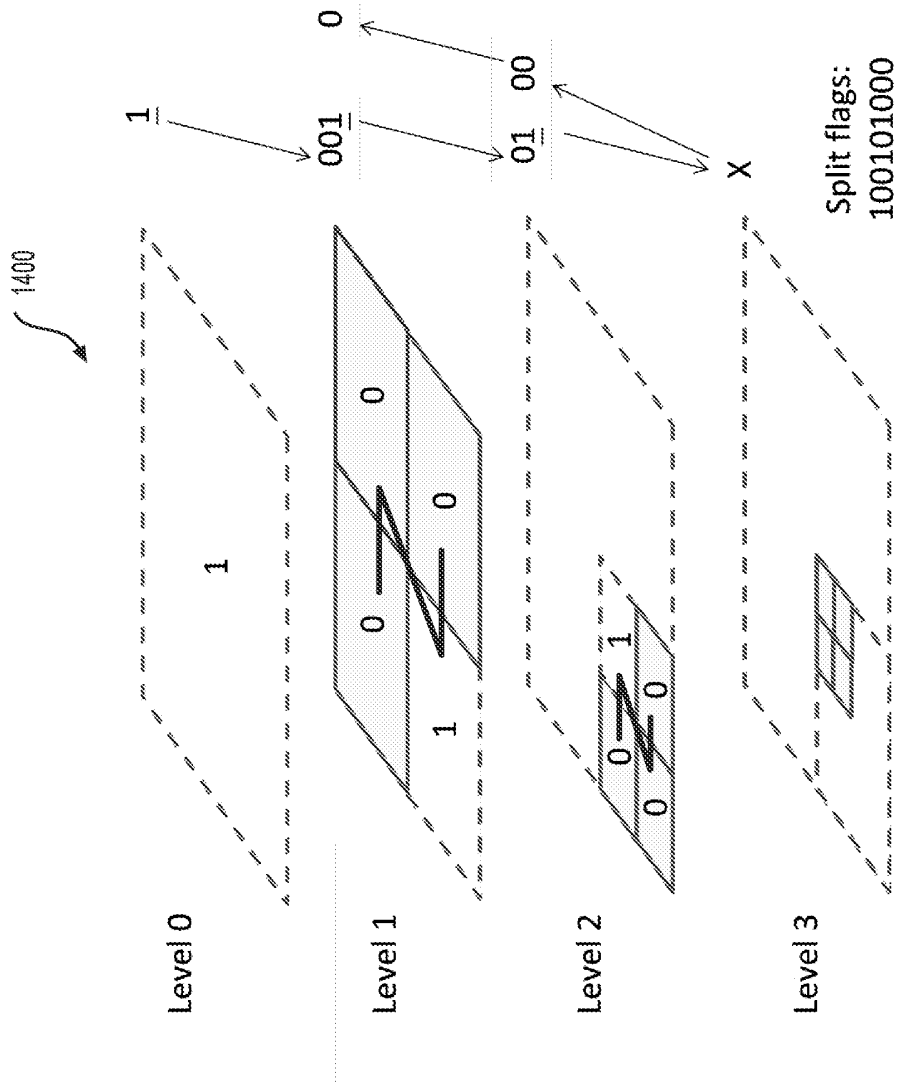
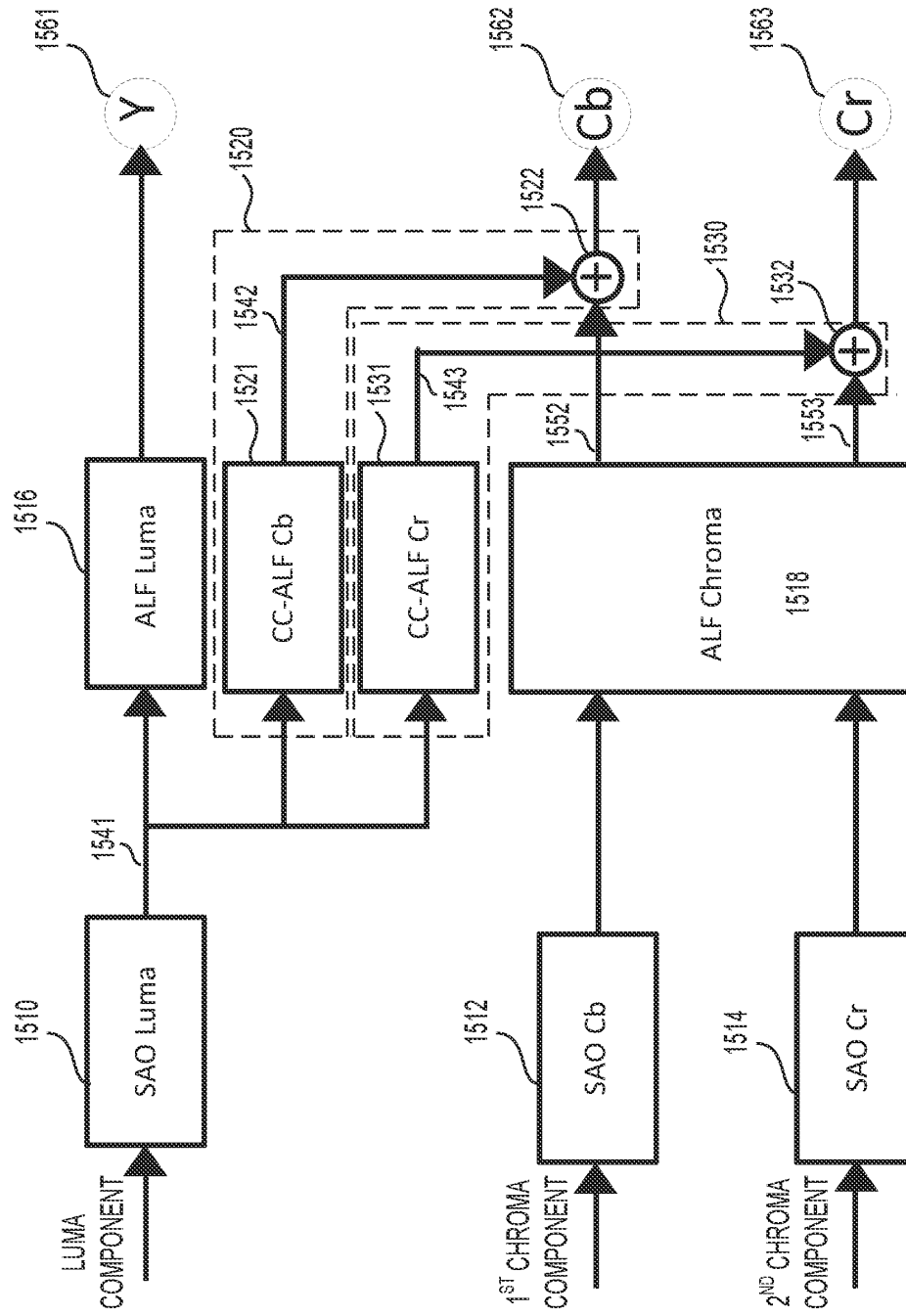
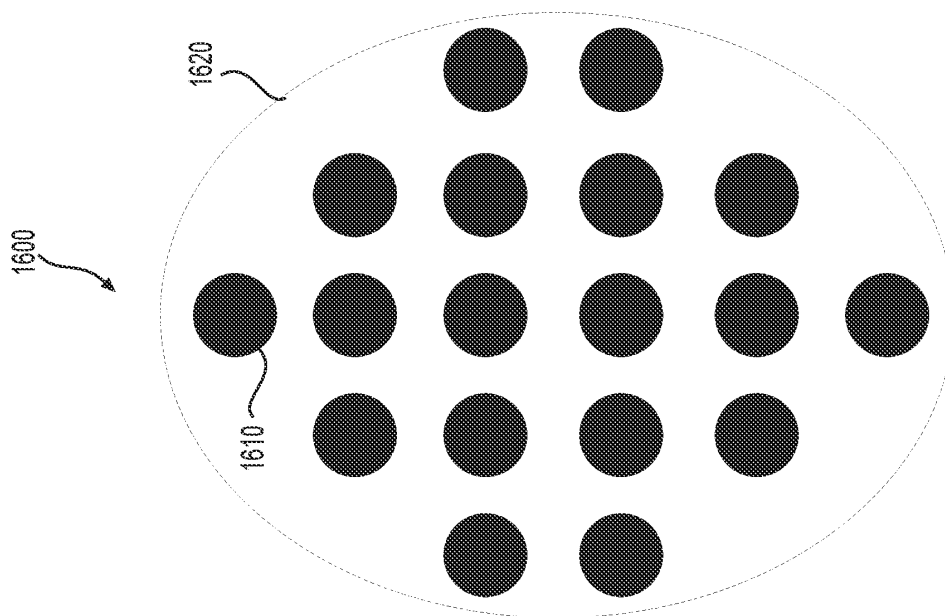


FIG. 14

**FIG. 15**

**FIG. 16**

if(slice_cross_component_alf_cb_enabled_flag)	
alf_ctb_cross_component_cb_idc [xCtb >> CtbLog2SizeY][yCtb >> CtbLog2SizeY]	ae(v)
if(slice_cross_component_alf_cb_enabled_flag == 0 alf_ctb_cross_component_cb_idc[xCtb >> CtbLog2SizeY][yCtb >> CtbLog2SizeY] == 0)	
if(slice_alf_chroma_idc == 1 slice_alf_chroma_idc == 3) {	
alf_ctb_flag [1][xCtb >> CtbLog2SizeY][yCtb >> CtbLog2SizeY]	ae(v)
if(alf_ctb_flag[1][xCtb >> CtbLog2SizeY][yCtb >> CtbLog2SizeY] && aps_alf_chroma_num_alt_filters_minus1 > 0)	
alf_ctb_filter_alt_idx [0][xCtb >> CtbLog2SizeY][yCtb >> CtbLog2SizeY]	ae(v)
}	
if(slice_cross_component_alf_cr_enabled_flag)	
alf_ctb_cross_component_cr_idc [xCtb >> CtbLog2SizeY][yCtb >> CtbLog2SizeY]	ae(v)
if(slice_cross_component_alf_cr_enabled_flag == 0 alf_ctb_cross_component_cr_idc[xCtb >> CtbLog2SizeY][yCtb >> CtbLog2SizeY] == 0)	
if(slice_alf_chroma_idc == 2 slice_alf_chroma_idc == 3) {	
alf_ctb_flag [2][xCtb >> CtbLog2SizeY][yCtb >> CtbLog2SizeY]	ae(v)
if(alf_ctb_flag[2][xCtb >> CtbLog2SizeY][yCtb >> CtbLog2SizeY] && aps_alf_chroma_num_alt_filters_minus1 > 0)	
alf_ctb_filter_alt_idx [1][xCtb >> CtbLog2SizeY][yCtb >> CtbLog2SizeY]	ae(v)
}	

FIG. 17

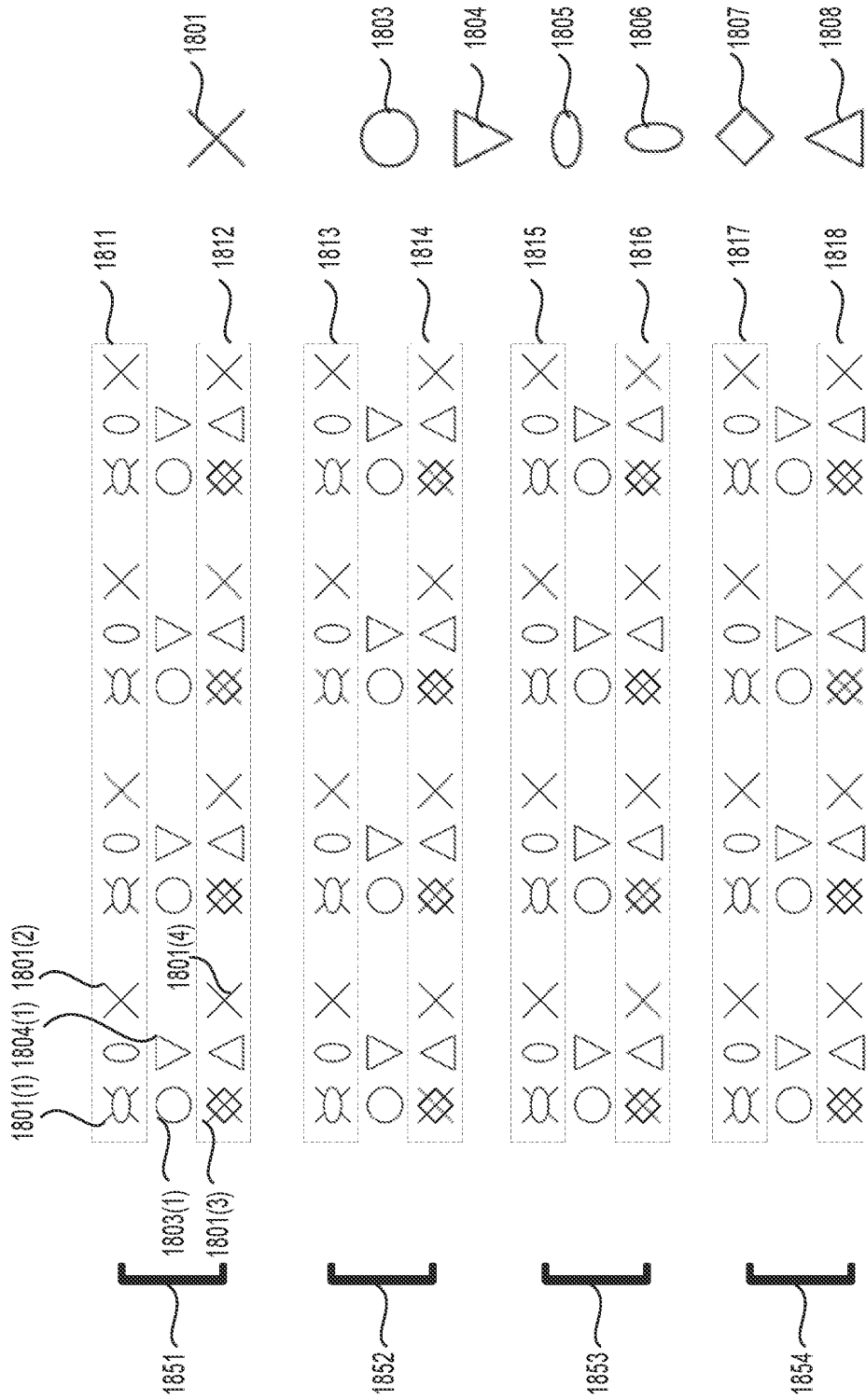
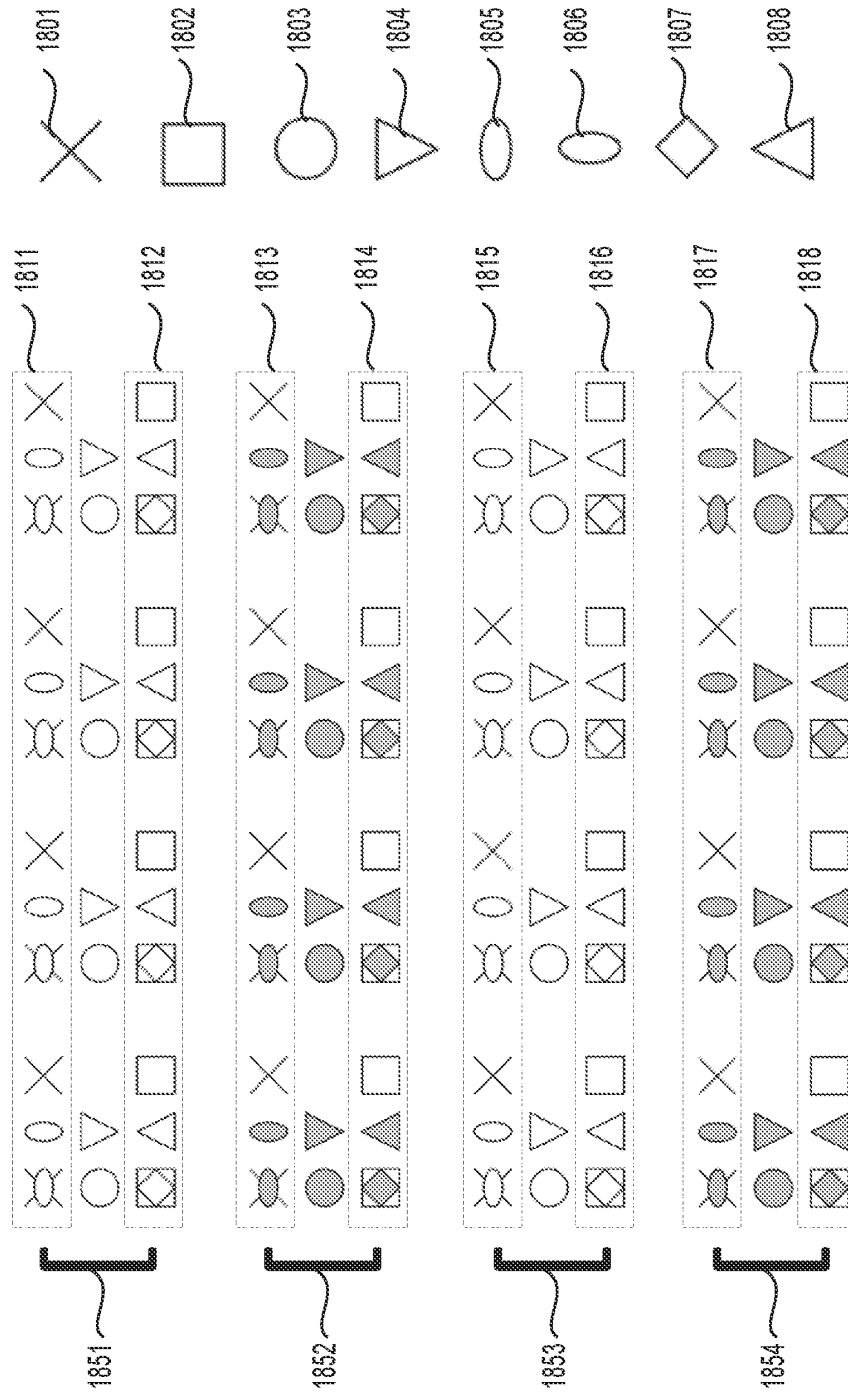


FIG. 18A

**FIG. 18B**

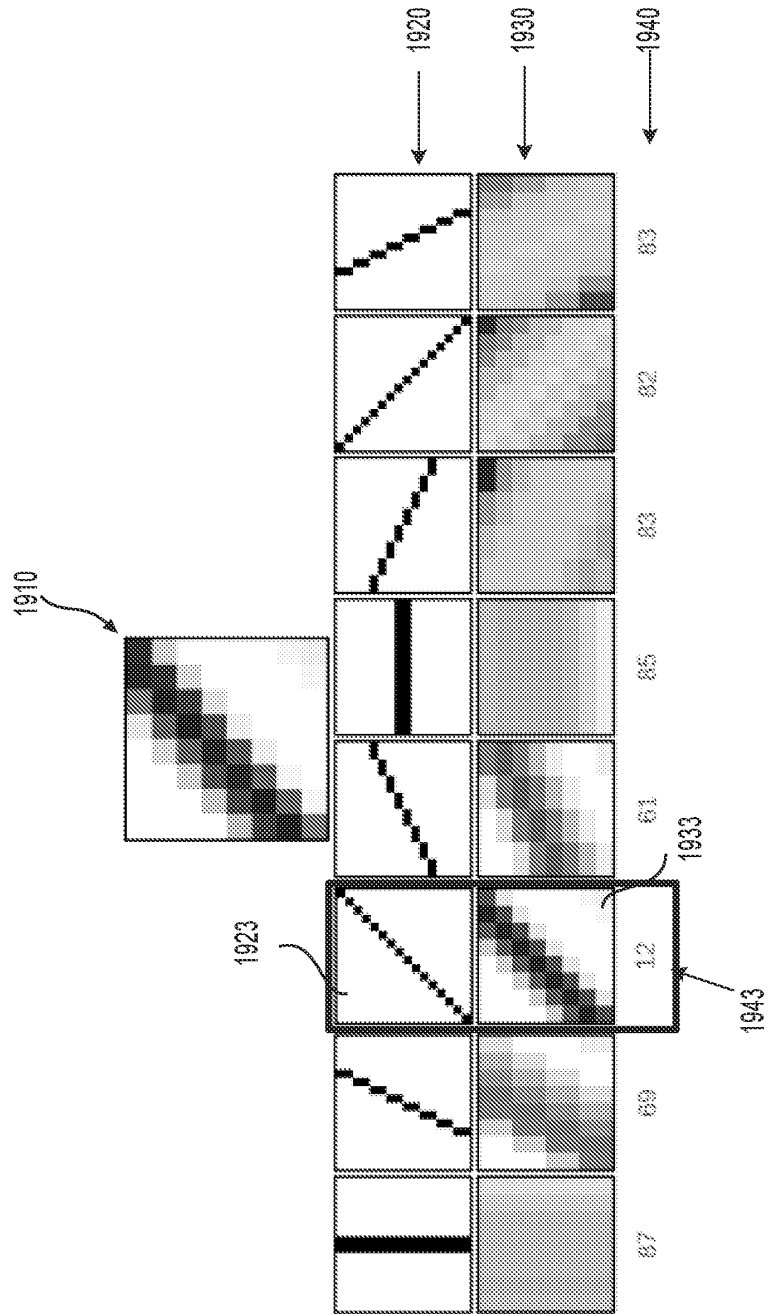
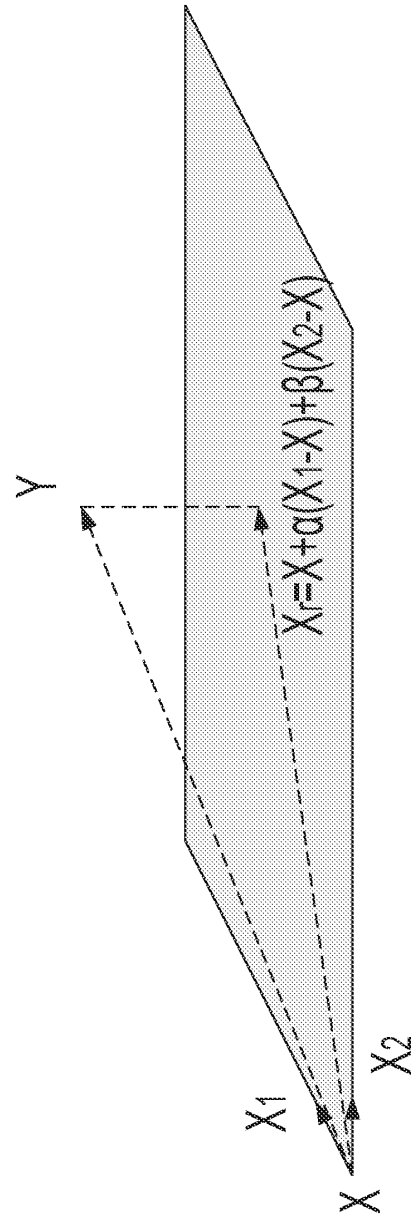


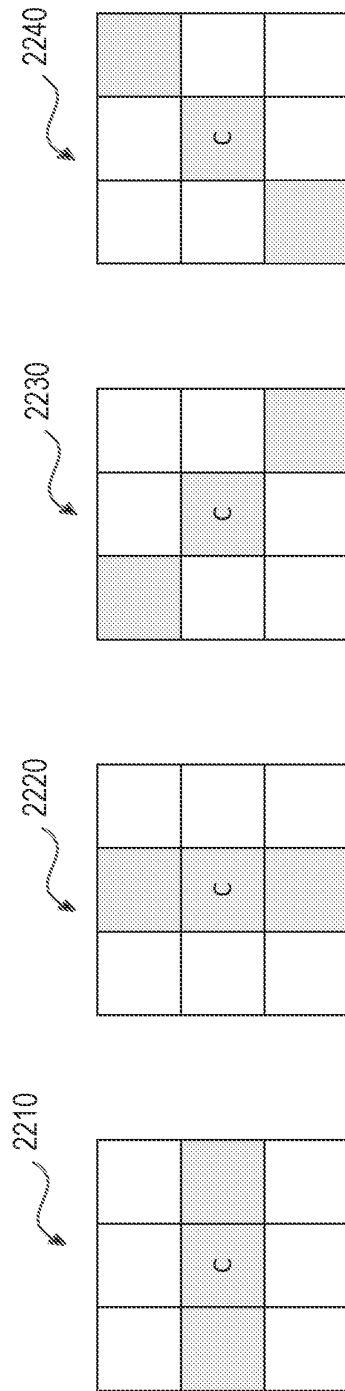
FIG. 19

**FIG. 20**

2100

SAO Type	Sample Adaptive Offset Type to be used	Number of categories
0	None	0
1	1-D 0-degree pattern edge offset	4
2	1-D 90-degree pattern edge offset	4
3	1-D 135-degree pattern edge offset	4
4	1-D 45-degree pattern edge offset	4
5	central bands band offset	16
6	side bands band offset	16

FIG. 21

**FIG. 22**

2300



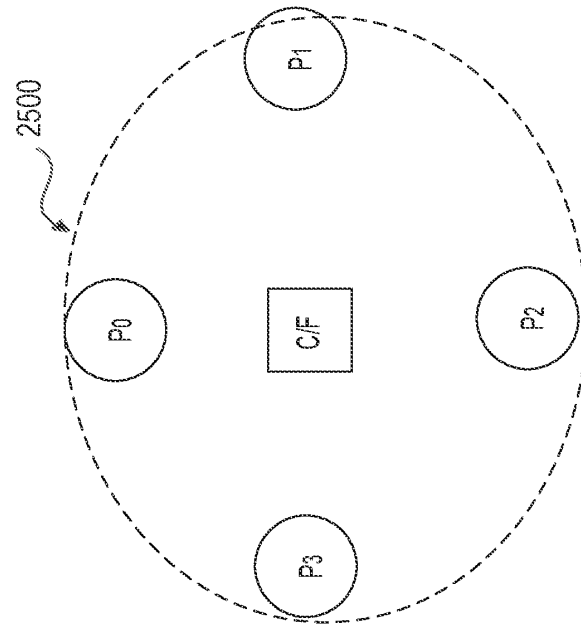
Category	Condition
1	$c < 2$ neighbors
2	$c < 1$ neighbor & $c == 1$ neighbor
3	$c > 1$ neighbor & $c == 1$ neighbor
4	$c > 2$ neighbors
0	None of the above

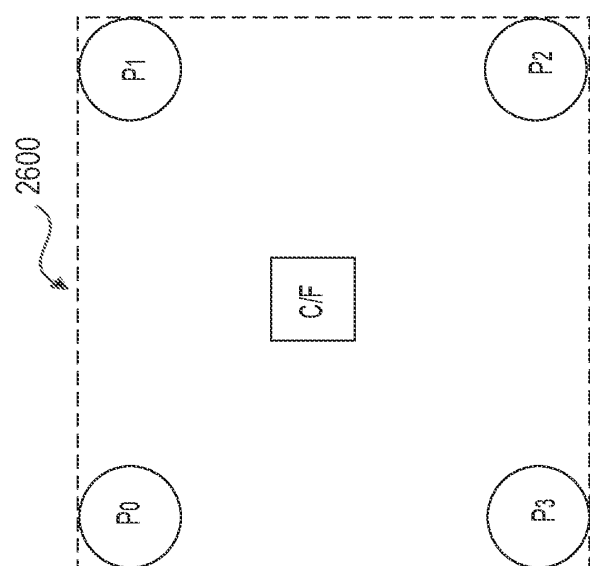
FIG. 23

2400

sao_offset_vlc(rx, ry, cldx) {	Descriptor
sao_type_idx[cldx][rx][ry]	ue(v)
if(sao_type_idx[cldx][rx][ry] == 5) {	
sao_band_position[cldx][rx][ry]	u(5)
for(i = 0; i < 4; i++)	
sao_offset[cldx][rx][ry][i]	se(v)
} else if(sao_type_idx[cldx][rx][ry] != 0)	
for(i = 0; i < 4; i++)	
sao_offset[cldx][rx][ry][i]	ue(v)
}	

FIG. 24

**FIG. 25**

**FIG. 26**

 2700

Combination	d0	d1	d2	d3	Offset
0	-1	-1	-1	-1	s0
1	-1	-1	-1	0	s1
2	-1	-1	-1	1	s2
3	-1	-1	0	-1	s3
4	-1	-1	0	0	s4
5	-1	-1	0	1	s5
6	-1	-1	1	-1	s6
7	-1	-1	1	0	s7
8	-1	-1	1	1	s8
9	-1	0	-1	-1	s9
10	-1	0	-1	0	s10
11	-1	0	-1	1	s11
12	-1	0	0	-1	s12
13	-1	0	0	0	s13
14	-1	0	0	1	s14
15	-1	0	1	-1	s15
16	-1	0	1	0	s16
17	-1	0	1	1	s17
18	-1	1	-1	-1	s18
19	-1	1	-1	0	s19
20	-1	1	-1	1	s20
21	-1	1	0	-1	s21
22	-1	1	0	0	s22
23	-1	1	0	1	s23
24	-1	1	1	-1	s24
25	-1	1	1	0	s25
26	-1	1	1	1	s26

FIG. 27A

 2700

Combination	d0	d1	d2	d3	Offset
27	0	-1	-1	-1	s27
28	0	-1	-1	0	s28
29	0	-1	-1	1	s29
30	0	-1	0	-1	s30
31	0	-1	0	0	s31
32	0	-1	0	1	s32
33	0	-1	1	-1	s33
34	0	-1	1	0	s34
35	0	-1	1	1	s35
36	0	0	-1	-1	s36
37	0	0	-1	0	s37
38	0	0	-1	1	s38
39	0	0	0	-1	s39
40	0	0	0	0	s40
41	0	0	0	1	s41
42	0	0	1	-1	s42
43	0	0	1	0	s43
44	0	0	1	1	s44
45	0	1	-1	-1	s45
46	0	1	-1	0	s46
47	0	1	-1	1	s47
48	0	1	0	-1	s48
49	0	1	0	0	s49
50	0	1	0	1	s50
51	0	1	1	-1	s51
52	0	1	1	0	s52
53	0	1	1	1	s53

FIG. 27B

 2700

Combination	d0	d1	d2	d3	Offset
54	1	-1	-1	-1	s54
55	1	-1	-1	0	s55
56	1	-1	-1	1	s56
57	1	-1	0	-1	s57
58	1	-1	0	0	s58
59	1	-1	0	1	s59
60	1	-1	1	-1	s60
61	1	-1	1	0	s61
62	1	-1	1	1	s62
63	1	0	-1	-1	s63
64	1	0	-1	0	s64
65	1	0	-1	1	s65
66	1	0	0	-1	s66
67	1	0	0	0	s67
68	1	0	0	1	s68
69	1	0	1	-1	s69
70	1	0	1	0	s70
71	1	0	1	1	s71
72	1	1	-1	-1	s72
73	1	1	-1	0	s73
74	1	1	-1	1	s74
75	1	1	0	-1	s75
76	1	1	0	0	s76
77	1	1	0	1	s77
78	1	1	1	-1	s78
79	1	1	1	0	s79
80	1	1	1	1	s80

FIG. 27C

2800

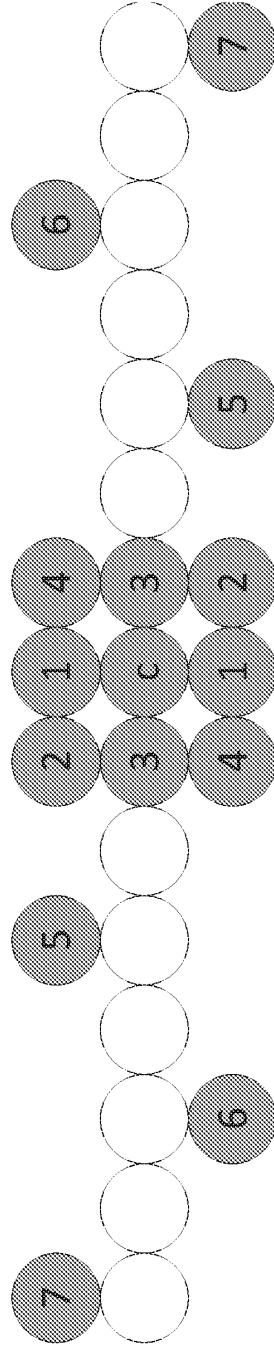
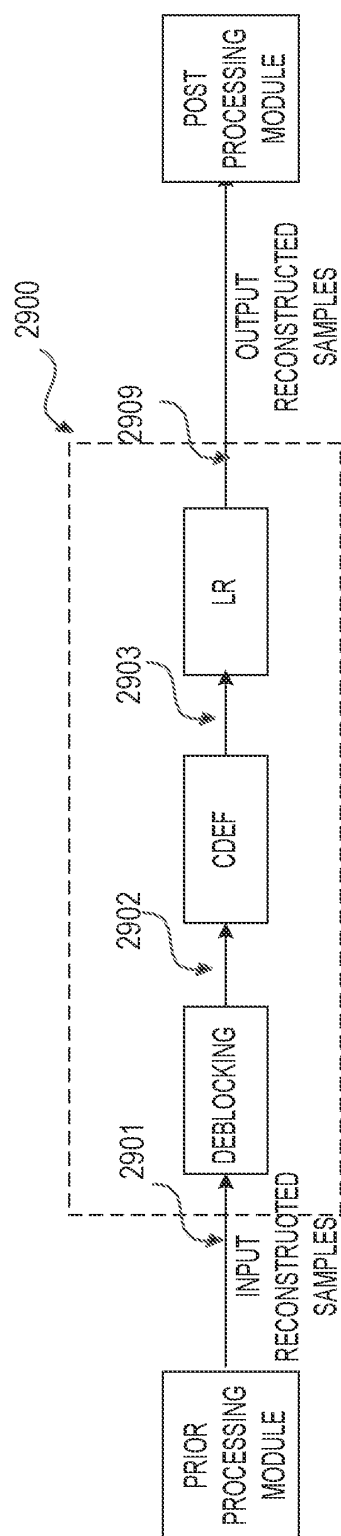
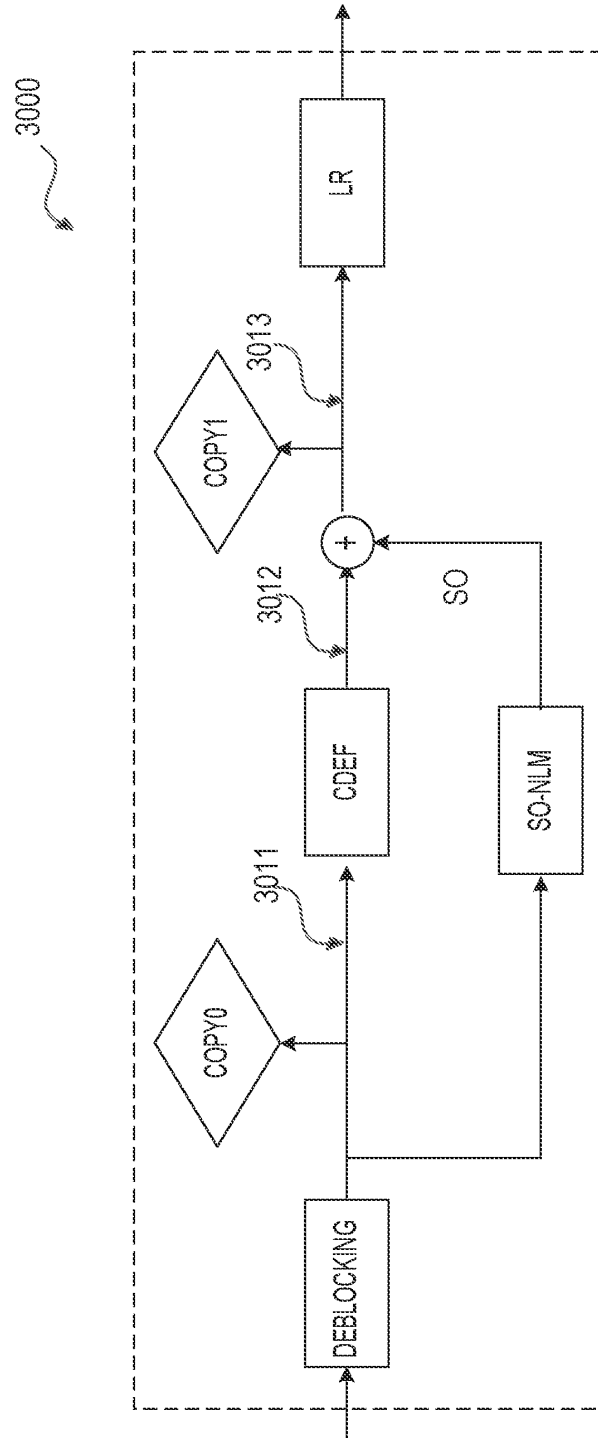
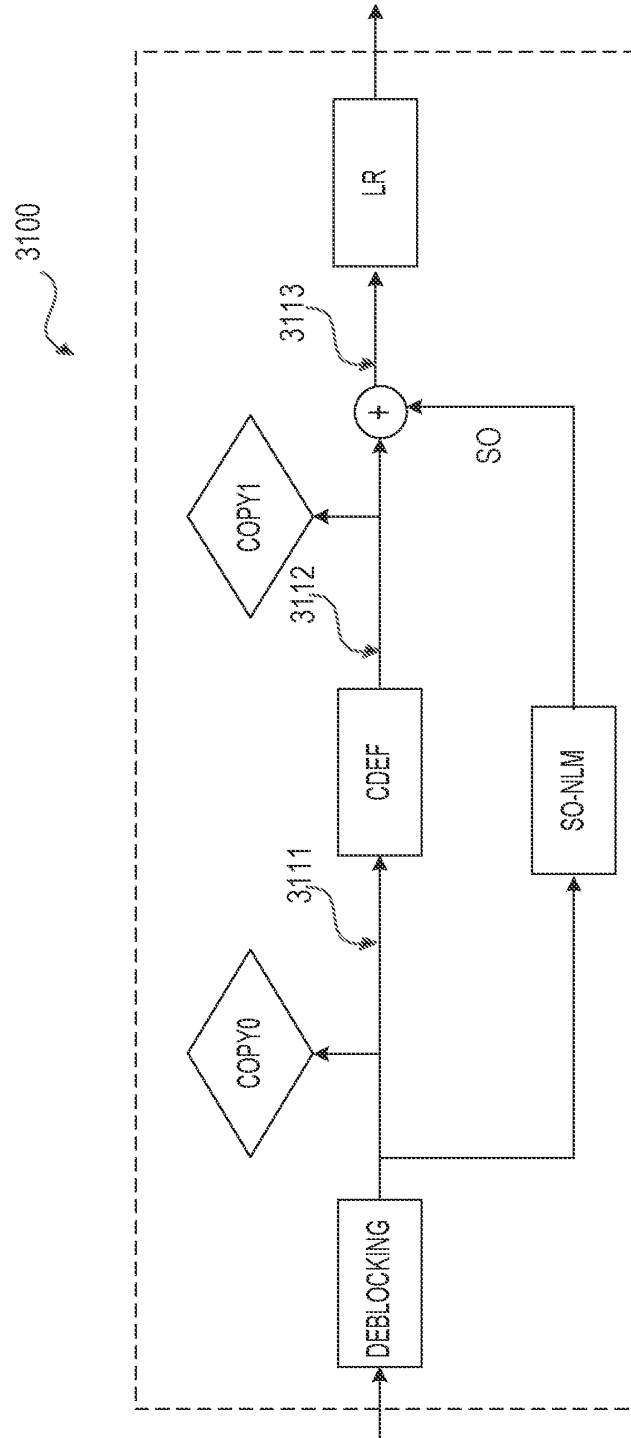
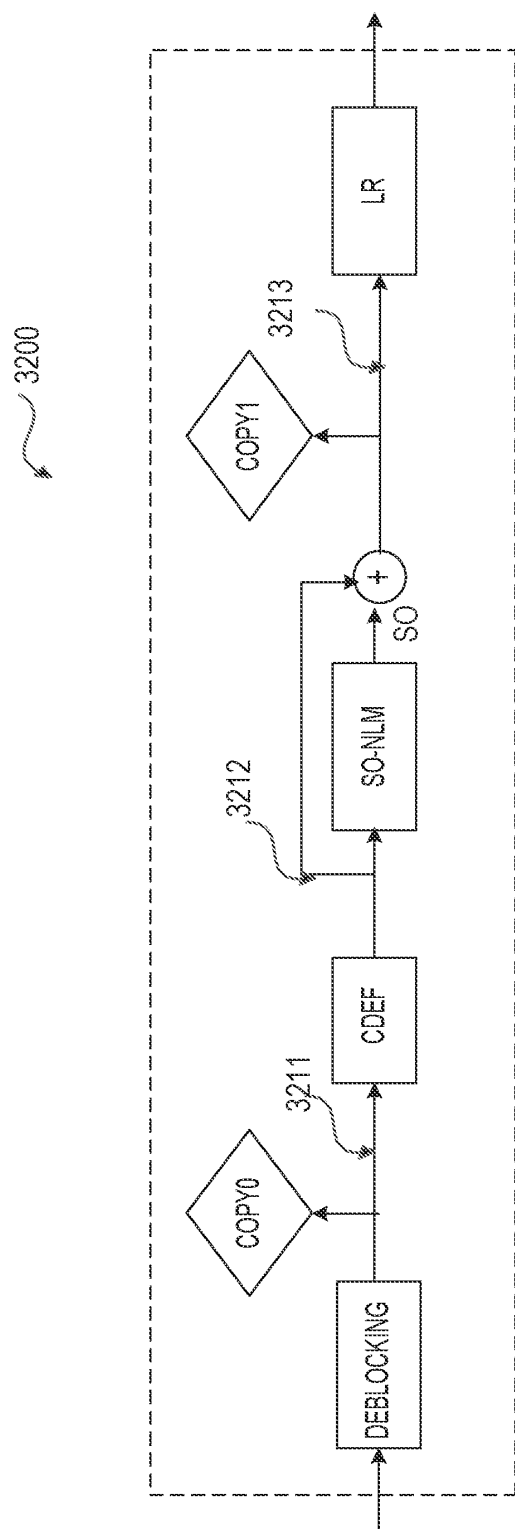


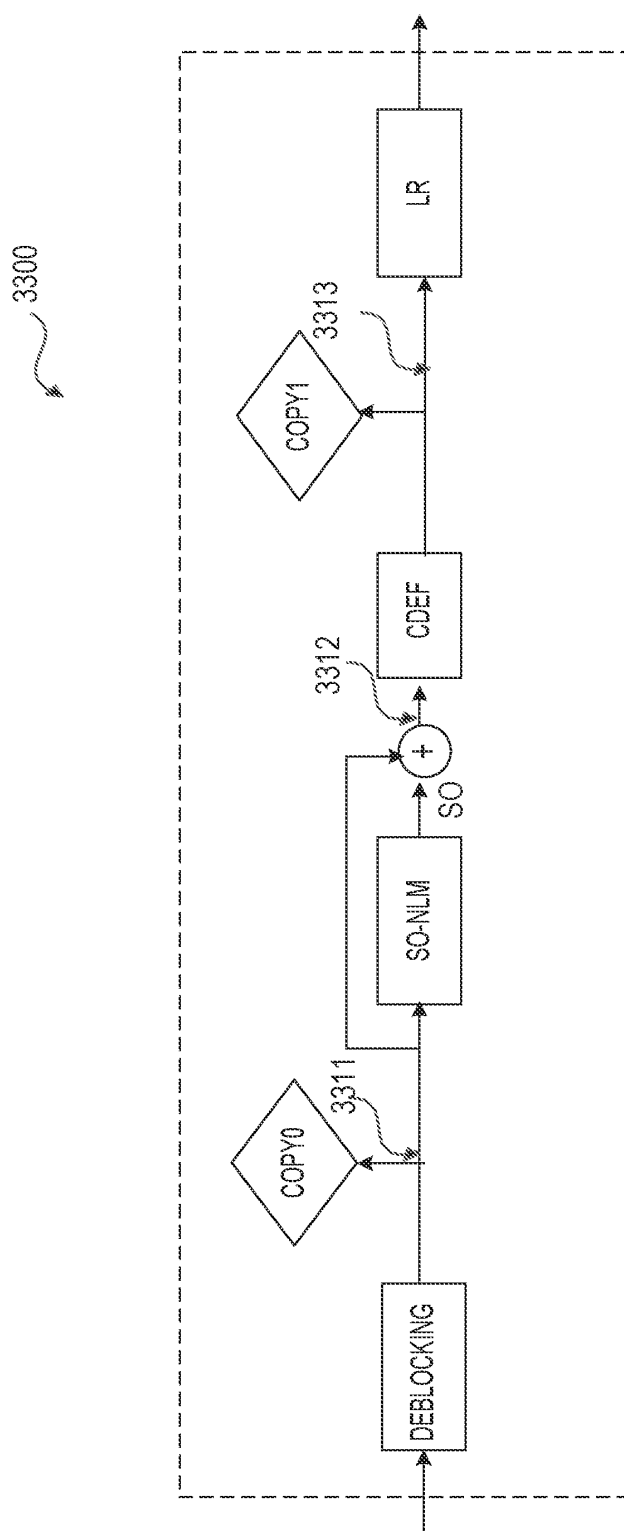
FIG. 28

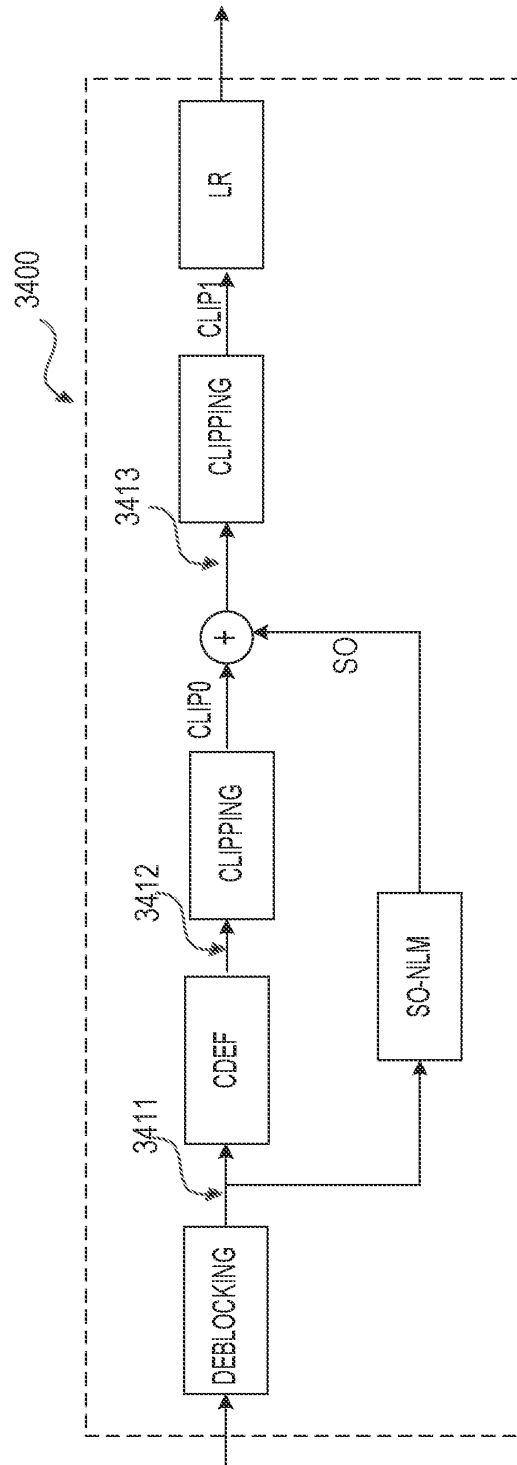
**FIG. 29**

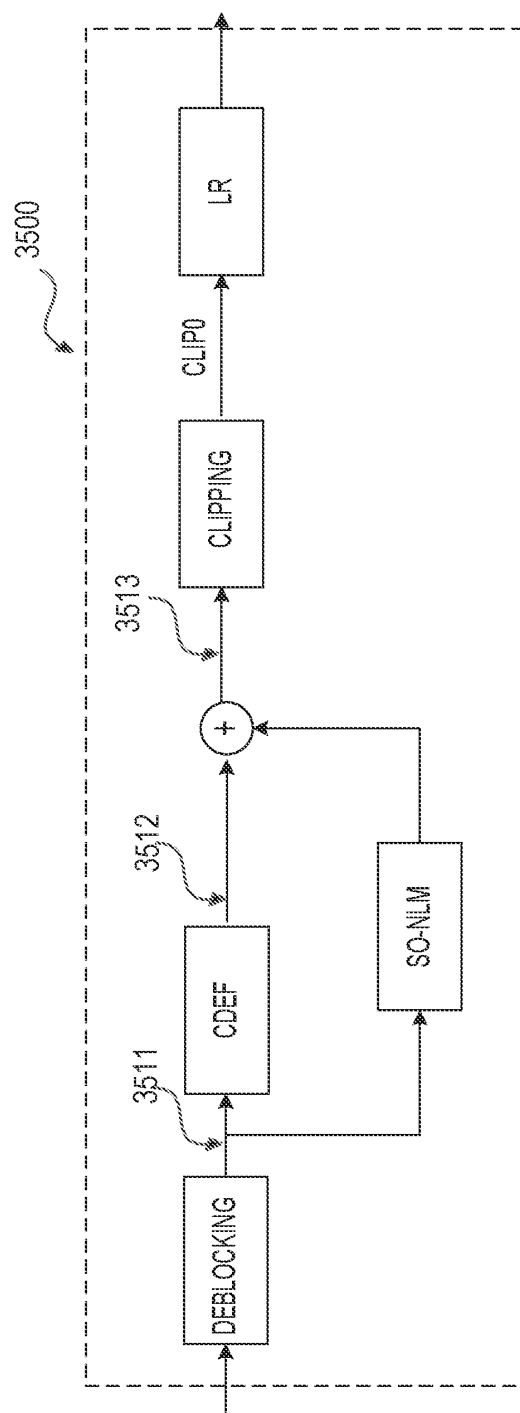
**FIG. 30**

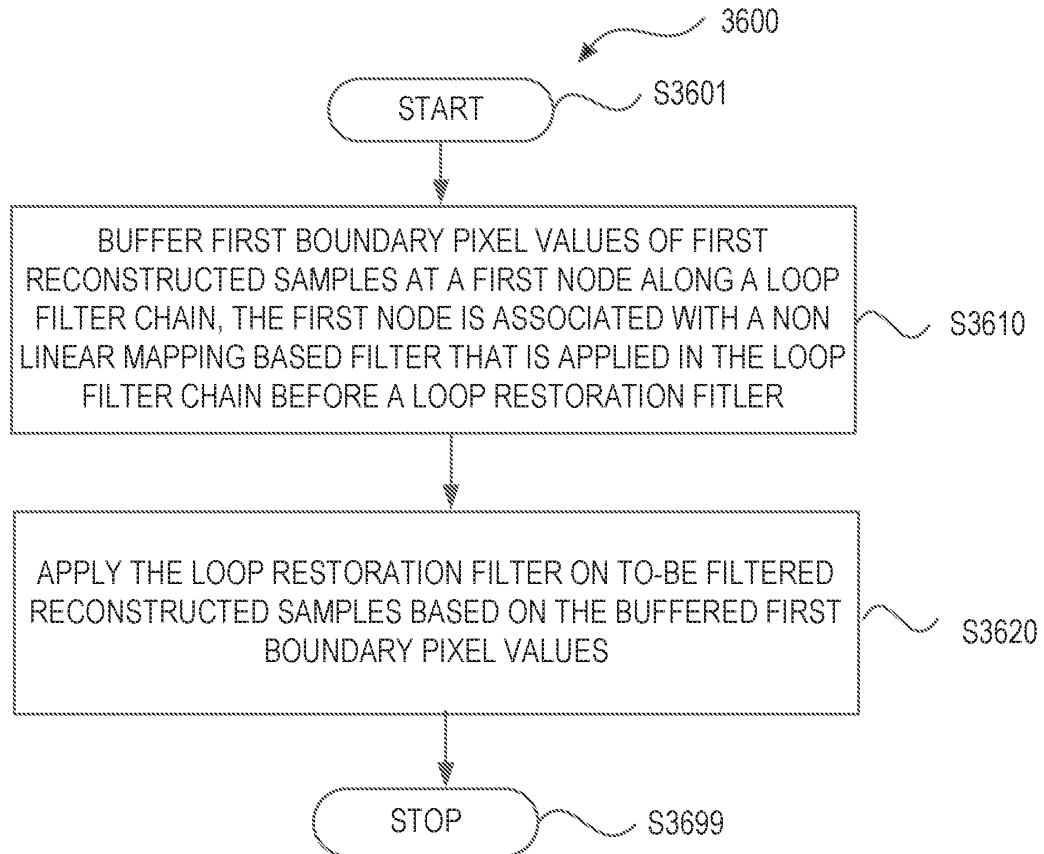
**FIG. 31**

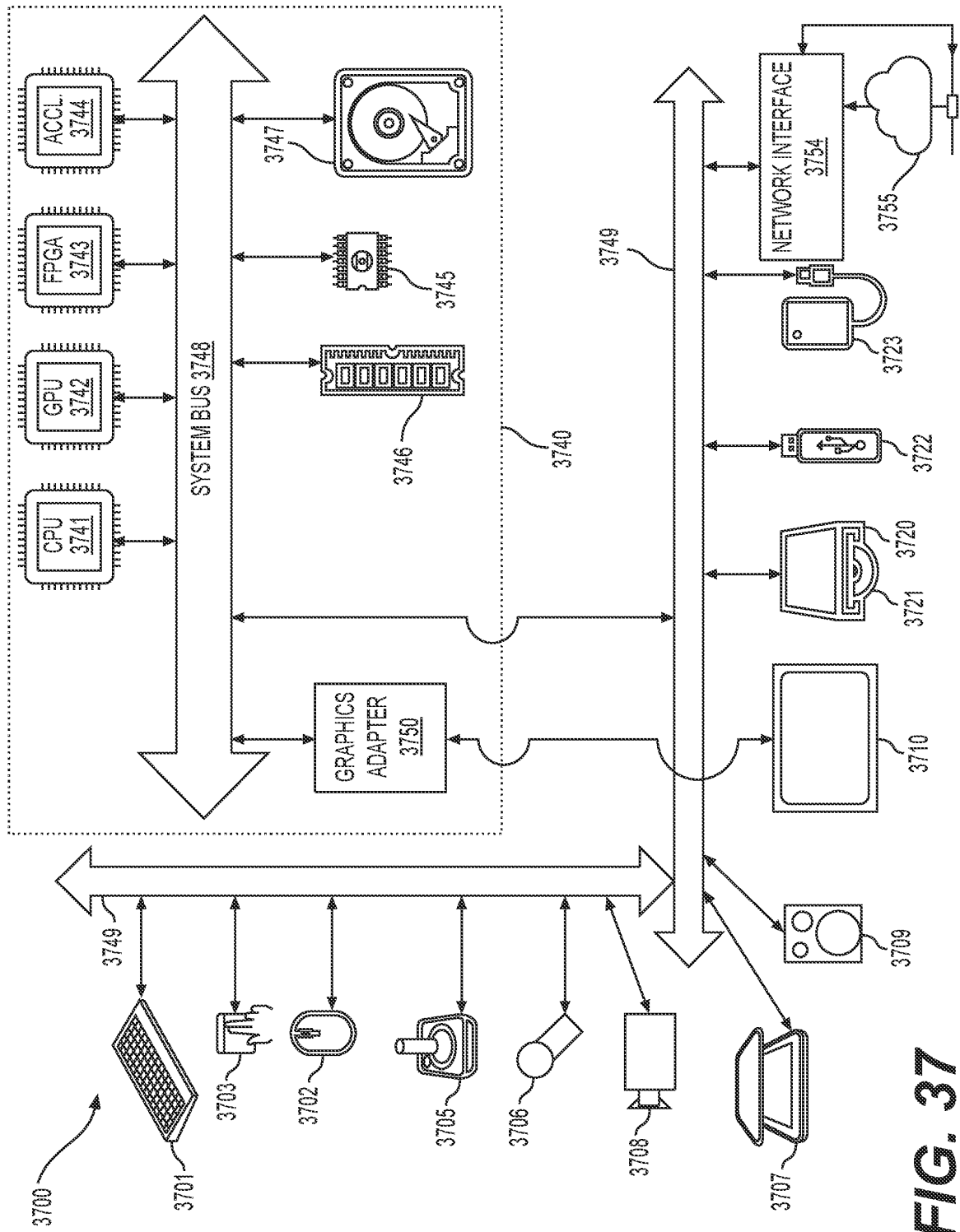
**FIG. 32**

**FIG. 33**

**FIG. 34**

**FIG. 35**

**FIG. 36**

**FIG. 37**